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| **Title: Home Sweet Home** | **Grade Level: 9-12** |
| **Objectives:**   1. SWBAT create a list of requirements for an animal’s survival. 2. SWBAT justify the use of materials and floor plan for an animal’s habitat. 3. SWBAT create a close-to-scale model of their animal’s habitat. 4. SWBAT create a blue print that coincides with their description and model for their animal’s habitat. 5. SWBAT identify factors that will affect their animal and how they will affect it. 6. SWBAT revise plans that will not work and substitute more suitable plans. | |
| **Illinois Learning Standards:**  Stage H: 11A — Students who meet the standard know and apply the concepts, principles, and processes of scientific inquiry.  Conduct issue investigation, using technologies for data collection and assimilation, following established formats for random sampling, or following all procedural and safety precautions, materials and equipment handling directions.  Formulate issue-specific hypothesis, generating inquiry questions for an issue investigational premise, differentiating qualitative and quantitative data and their applicability, using conceptual/mathematical/physical models, or previewing associated research.  Stage H: 12B — Students who meet the standard know and apply concepts that describe how living things interact with each other and with their environment.  Apply scientific inquiries or technological design to explore the implications of change and stability in ecosystems, identifying evolutionary adaptations brought on by environmental changes, analyzing factors that influence the size and stability of populations (e.g., temperature, climate, soil conditions, predation, habitat), or contrasting energy use by organisms.  Stage I: 11B — Students who meet the standard know and apply the concepts, principles, and processes of technological design.  Construct innovation model, sketching progressive schematics of the design, collecting appropriate materials, supplies, and safety equipment, or completing assembly of innovation or model. | |
| **Engagement:** The first paragraph describes how students are given the responsibility of creating an optimal environment for the animal of their choosing. Hopefully students will choose an animal they are interested in and will therefore be more engaged. | |
| **Exploration**: The paper that students will be writing will get them to explore all aspects of their animal’s ‘world’. The worksheet will also help students explore the aspects required in this project. The worksheet should just be starting point for the project. | |
| **Explanation:** The blue print will serve as a way for students to illustrate and put together the aspects they described in their paper. It will allow students to plan their model while taking their paper into consideration. | |
| **Elaboration:** The model will elaborate on the blueprint and the paper and allow students to reflect on their work to see how their plans work out. The model may also bring up issues they did not consider in their paper and cause them to add more thorough information. | |
| **Evaluation(Assessment Strategies):** The paper, blue print and model are all worth a certain amount of points according to rubrics listed. | |
| **Rationale:** This activity allows students to draw on the majority of information taught in class to this point and applying it to a project that makes at least some of that information concrete. The paper will give students the chance to organize their information and do the research to support their model. The blueprint is to help the students plan before they build the model and incorporate what they wrote in their paper. The model should hopefully be the fun part of this project and give the students some variation to the usual paper and lab report. | |
| **Resources:**  Illinois State Board of Education. Illinois Leaning Standards. Retrieved from  [www.isbe.state.il.us/ils/science/stage\_I/descriptor.htm](http://www.isbe.state.il.us/ils/science/stage_I/descriptor.htm). | |

Implementation:

Students should be given a class period to select the animal they will be building the home for and to ask questions about the project and get started. Most of this work should be done outside of class, but another day or two in class can be given to check progress and allow more questions. Students can do this on their own or the teacher can choose to put students in groups. The paper should be done a week after the assignment is assigned and another week for the blue print and model. It would be a good idea to have students turn in a rough draft of their paper a week after the assignment is assigned to make sure students are getting enough time to complete each part of the project.

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| Paper Rubric | 0 | 1 | 2 | 3 |
| Paper justification for structure materials | 0/3 materials justified | 1/3 materials justified | 2/3 materials justified | Paper includes reasoning for floor, walls and ceiling materials and placement. |
| Paper justification for food | 0/3 aspects justified | 1/3 aspects justified | 2/3 aspects justified | Paper includes justification for which food to feed, how to feed it and how much/often to feed it. |
| Paper justification for water | 0/3 aspects justified | 1/3 aspects justified | 2/3 aspects justified | Paper includes justification for how water should be provided, how much should be provided and when it should be provided. |
| Paper justification for climate | 0/3 aspects justified | 1/3 aspects justified | 2/3 aspects justified | Paper includes justification for the temperature of the home, humidity of the home, and how that will be controlled. |
| Paper justification for socialization | 0/3 aspects justified | 1/3 aspects justifified | 2/3 aspects justified | Paper includes justification for number of organisms per space, availability of contact between organisms, and |
| Paper includes explanation of additional habitat features. | 0/2 no features explained |  | 2/2 additional features explained |  |
| Grammar | 0/3 10 or more grammatical errors | 1/3 6-9 grammatical errors | 2/3 1-5 grammatical errors | 3/3 no grammatical errors |
| Works Cited | 0/2 Work cited not cited correctly | 1/2 Work is cited but with errors | 2/2 work is cited correctly |  |

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| Blue print rubric | 0 | 1 | 2 | 3 |
| Completeness of blueprint | 0/3 missing 3 structures present in paper and model | 1/3 missing 2 structures present in paper and model | 2/3 missing 1 structure present in paper and model | 3/3 all structures accounted for from paper and model |
| Neatness of blueprint | 0/2 straight edge not used and incorrect angles |  | 2/2 all lines are drawn with straight edge and appropriate angles represented |  |
| Labeling of structures | 0/3  4-5 structures not labeled | 1/3  2-3 structures not labeled | 2/3  1 structure not labeled or labels are not readable | 3/3 all labels present and readable |
| Labeling of measurements | 0/3  4-5 measurements not labeled | 1/3  2-3 measurements not labeled | 2/3  1 measurement not labeled or labels not readable | 3/3 all measurements labeled and readable |
| Measurement key | 0/2 key for measurement representation not present | 1/2 key present but labeled measurements do not correspond correctly to key conversion amounts | 2/2 key included and measurements correctly represented according to key |  |

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| Model Rubric | 0 | 1 | 2 | 3 |
| Model accuracy | 0/3  4 or more structures not represented that are present in paper and blueprint | 1/3  2-3 structures not represented that are present in paper and blueprint | 2/3  1 structure not represented that is present in paper and blueprint | 3/3  all structures in paper and blueprint are represented in the model |
| Materials | 0/3  0 of the 3 represented in the materials | 1/3  1 of the 3 represented in the materials | 2/3  2 of the 3 represented in the materials | 3/3 materials used are structurally accurate, color accurate, and size accurate of the features they represent |
| Building technique | 0/3 3 or more structures not attached effectively/ accurately | 1/3 2 structures not attached effectively/ accurately | 2/3 1 structure not attached effectively/ accurately | 3/3 all structures attached in effective ways and accurate placement |
| Quality | 0/5 no model made | 1/5 model obviously thrown together at last minute | 2/5 model has 2 or more major features not accounted for | 3/5 good model with only a few details not accounted for |
|  |  |  | 4/5 good model with only a detail wrong | 5/5 obvious that time was spent making sure model is accurate and well put together |

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Total: \_\_\_\_\_\_\_/50